past month were statistically significant and two to three times larger among respondents who reported having emotional upset or physical symptoms due to treatment based on race, compared to those reporting no symptoms (Table 3). The odds of having these health conditions were also significantly higher among those who reported experiences worse than other races when seeking health care, compared to those with experiences the same as other races (Table 4; health insurance coverage is also controlled for in this table).

The logistic regression analyses also showed a significant association between reporting emotional upset and/or physical symptoms and a higher rate of being diagnosed with arthritis (OR=1.95, $p < 0.05$ from Table 3) after controlling for gender, age, race, education level, household income, and health insurance coverage. Likewise, the logistic regression results revealed that reporting experiences worse than other races when seeking health care was associated with higher rates of arthritis (OR=3.04, $p < 0.05$) and diabetes (OR=1.66, $p < 0.05$) diagnoses (Table 4).

Discussion

The results of this study show that perceived unequal treatment based on race is associated with lower quality of life and with higher rates of chronic diseases and health risks. The relationship between perceived treatment based on race and chronic conditions is consistent with other studies of cardiovascular disease and hypertension.[30,31] Intergenerational exposures to racism and disparaging racial stereotypes are considered chronic stressors that have a "weathering down" effect over time, taking a toll on people's health and thereby increasing their risk for conditions such as hypertension, diabetes, and cardiovascular disorders.[32] It is especially interesting that perceived worse treatment based on race in this study was associated with chronic conditions such as arthritis, asthma, and diabetes, which may have some autoimmune causes. Continued exposure to chronic stress and attempts to cope with it may wear down an individual's immune system, resulting in a lowered resistance to illness.[33]

An important feature of this study was that we were able to control for the prevalence of chronic conditions when looking at the associations between the quality of life measures and the two measures of perceived treatment based on race (emotional upset or physical symptoms and experiences worse than other races when seeking health care). Yet we still found a significantly lower quality of life reported among persons with experiences worse than other races when seeking health care and those reporting emotional upset or physical symptoms due to treatment based on race.

One should not conclude from the strong associations observed here between chronic conditions and the two measures of perceived treatment based on race that there is a cause-and-effect relationship. We have self-reported data for these respondents, we do not know their history of exposure, and many of these conditions may take a long time to develop. Establishing such a causal relationship would require a carefully planned, longitudinal study involving a large number of participants. Nevertheless, given the strong statistical associations in the present study, our findings suggest that unequal treatment based on race may be one factor leading to development of these chronic conditions. Unfair treatment based on race or racial discrimination has historically been strongly linked to an unequal distribution of social, political, and economic resources, which are important determinants of health status.[34]

There are several limitations to this study. First, the BRFSS data, which are cross-sectional, do not allow for causal inferences, as mentioned in connection with chronic conditions. Second, telephone surveys are limited to persons living in households with telephones; thus, they may underrepresent groups such as the poor, those located in a rural or inner city areas, and renters.[35] However, approximately 95 percent of households in North Carolina do have one or more telephones. Furthermore, post-stratification weights are used to help correct for any bias caused by non-telephone coverage. Finally, the data are self-reported by the respondents, which may result in misreporting of certain health conditions.